

**ABSTRACT OF THE DISCLOSURE**

A system and method for transporting IN/AIN signaling (e.g., SS7 signaling) over an IP-based network using Stream Control Transmission Protocol (SCTP), wherein a peer-to-peer protocol adaptation (PPA) structure is provided at a signaling node. The PPA structure includes an interworking functionality between an MTP3 layer and the SCTP messaging, and operates to provide a symmetrical MTP2 adaptation interface therebetween. The PPA interface functionality facilitates the implementation of network management capabilities included in the MTP3 layer such that the advantageous features of SS7 signaling are retained in the SCTP transport. The MTP2 adaptation interface functionality is processed locally with respect to the signaling node, rather than backhauling the associated signaling to an external node via an IP connection. The PPA structure may be provided at any signaling node operable to establish a virtual link across an IP connection such as, for example, a signaling gateway, an IP-compliant SCP or STP, et cetera.